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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,915	05/11/2006	Shozaburo Konishi	04703/0203963-US0	4217
7278	7590	05/24/2010		
DARBY & DARBY P.C. P.O. BOX 770 Church Street Station New York, NY 10008-0770			EXAMINER VASISTH, VISHAL V	
			ART UNIT	PAPER NUMBER
			1797	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,915	Applicant(s) KONISHI ET AL.	
	Examiner VISHAL VASISTH	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 13-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 13-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 4/20/2010 has been entered.

Response to Amendment

2. Applicants' response filed on 4/20/2010 amended independent claims 1, 5 and 6, cancelled claims 10-12 and added new dependent claims 13-19. Applicants' amendments overcome the objection to claim 1 and therefore this objection is withdrawn. Neither applicants' arguments addressed below nor amendments overcome the 35 USC 103 rejection over Miyake in view of Yagishita.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-2, 4-7 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al., JP Publication No. 2000-297373 (hereinafter referred to as Miyake) in view of Yagishita et al., US Patent Application Publication No. 2002/0142922 (hereinafter referred to as Yagishita).

Miyake discloses a lubricant (as recited in claims 1 and 5-6) and a system having a pair of DLC contacting faces being opposed to each other and moving relative to one another, wherein at least one of which is coated with a DLC film (as recited in claim 1) and is suitably used in lubricating oils such as an engine and transmission oil (as recited in claims 4-5) (Para. [0001]-[0002] and [0005]).

Miyake as discussed above discloses the presence of a lubricating oil which can be used on a DLC coated surface in order to reduce the coefficient of friction. Miyake does not, however, explicitly disclose a base oil wherein at least one of a hydrocracked mineral oil, a wax-isomerized mineral oil, and a poly-alpha-olefin base oil having a kinematic viscosity of 3.5 to 5 mm²/s at 100° C, a total aromatic content of 0 to 2 mass%, and a total sulfur content of not higher than 0.002 mass %. Miyake also does

not explicitly disclose the sulfur content of the lubricant or the additives present in the lubricant.

Yagishita discloses a lubricating oil composition for an internal combustion engine (Para. [0021]) comprising a poly- α -olefin synthetic base oil (as recited in claims 1 and 5-6) (Para. [0029]) having a kinematic viscosity of more preferably between 2 and 10 mm²/s at 100° C (which is within and overlaps the kinematic viscosity range as recited in claims 1 and 5-6) (Para. [0021] and Table 1), a total aromatic content having an upper limit of 2 mass% (within and encompassing the aromatic range as recited in claims 1 and 5-6) (Para. [0024] and Table 2) and a total sulfur content of particularly preferably 0.005 mass% or less (within and overlapping the sulfur content range as recited in claims 1 and 5-6) (Para. [0023] and Table 2).

The fully formulated composition of Yagishita further discloses additives including 0.1 to 15 mass% of a calcium salicylate detergent (sulfur-free metal detergent as recited in claims 1 and 5-6 and salicylate as recited in claims 10-12) (Para. [0075] and [0090]), 0.01 to 5 mass% of a zinc dialkylphosphate (zinc dialkylphosphate as recited in claims 1 and 5-6) (Para. [0048] and [0051]), 0.01 to 5 mass% friction modifiers including long-chain aliphatic amines, long-chain fatty acids, long-chain fatty acid esters and long-chain aliphatic alcohols (friction modifiers as recited in claims 1 and 5-6) (Para. [0126]) and antioxidants such as dialkyldiphenylamine (sulfur-free ashless antioxidant as recited in claims 2 and 7) (Para. [0117]). Based on the molecular masses of the metal components in each of the detergent zinc dialkylphosphate components and their

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respective concentrations within the base oils there is at least an overlap between the metal contents disclosed in Yagishita and the those recited in instant claims 1 and 5-6.

Yagishita discloses aliphatic acid ester friction modifiers and octadecyl-3-(3,5-di-tert-butyl-4-hydroxy- phenyl)propionate antioxidants, but does not explicitly disclose glycerin monooleate being the specific aliphatic acid ester friction modifier or octyl-3-(3,5-di-tert-butyl-4-hydroxy- phenyl)propionate as the specific antioxidant. It is the position of the examiner that one of ordinary skill in the art would immediately envisage these specific additives from the disclosure of Yagishita and that these specific additives would be obvious to try as friction modifiers and antioxidants in the composition.

Based on the discussion above with the limited amount of sulfur content in the base oil, the lubricant composition particularly preferably has a sulfur content of 0.05 mass% or less (as recited in claims 1 and 5-6) (Para. [0133]). Furthermore, no mandatory additives containing sulfur are present in the lubricant composition (as recited in claims 1 and 5-6). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the base oil and additives of Yagishita in the composition of Miyake in order to enhance the high-temperature detergency and fuel efficiency of the lubricant composition (Para. [0006]-[0008] of Yagishita).

Response to Arguments

6. Applicants' arguments filed on 4/20/2010 with respect to claims 1-2, 4-7 and 13-19 have been fully considered and are not persuasive.

Applicants argue that neither Miyake nor Yagishita disclose the object of the present invention which is "to stably maintain low friction property." Firstly, Miyake states that extreme pressure additives do not easily form films or absorb on substrates with DLC or similar coatings, but Miyake does disclose the presence of an anti-wear additive such as zinc dithiophosphate and an antioxidant such as molybdenum dithiocarbamate. Miyake discloses that full expression of these additives is difficult but that the composition of Miyake along with the content of the coating can be combined in order to resolve the issue and embody a composition with low friction characteristics. Also, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Finally, it is the position of the examiner that the composition comprising Miyake modified by Yagishita discloses all of the limitations recited in the instant claims and would therefore inherently possess the properties taught by the instant application.

Applicants also argue that Yagishita merely discloses friction modifiers as optional additives and does not disclose an example using a specific friction modifier. This argument is also not persuasive. Yagishita discloses friction modifiers in order to reduce friction in internal combustion engine compositions that have metal surfaces. The entire disclosure of Yagishita needs to be examined and not simply the example oils. The fact that Yagishita discloses several friction modifiers that can be used in its

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composition indicates a general state of the art wherein a friction modifier may be used with a reasonable expectation of success.

Applicants contend that the instant claims are commensurate in scope with the specification, specifically the examples on pages 63-66 of the disclosure, and have demonstrated unexpected results. The data, however, is still not commensurate in scope with the claims. For example, the inventive oils from the instant specification include a calcium salicylate having a TBN of 166 and a calcium content of 6.2 mass% present in a concentration of 3 mass%. Claim 1 merely recites 0.05 to 0.3 mass% in terms of metal elements of alkali metal or alkaline earth metal salicylate. Also, the friction modifiers are glycerin monooleate present in a concentration of 1 mass%. Claim 1 merely recites 0.05 to 3.0 mass% of a friction modifier consisting of at least one of an oxygen-containing organic compound and aliphatic amines and does not include the concentrations. Furthermore, the sulfur-free antioxidants present in examples 5 in table 6 are specific compounds present in a concentration of 1 mass%.

Also, in applicants' tables only Table 6 and specifically examples 5-1 and 5-5 have all the limitations of instant claims 1 and 5-6. Example 5-5 further comprises the sulfur-free antioxidant which is not present in instant claims 1 and 5-6 and is also not present in example 5-1. These two examples do not demonstrate the best results across all time limits amongst the example oils. Also, the examples from Table 6 include examples wherein no phosphorus compound is present and yet the examples yield the same results as those example oils with a phosphorus compound. This can hardly be shown to demonstrate unexpected results. Finally, the comparative examples

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recited in the instant specification are not those represented by the closest prior art which is needed in order to demonstrate unexpected results.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VISHAL VASISTH whose telephone number is (571)270-3716. The examiner can normally be reached on M-R 8:30a-5:30p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Glenn A Caldarola/
Supervisory Patent Examiner, Art Unit 1797

VVV